



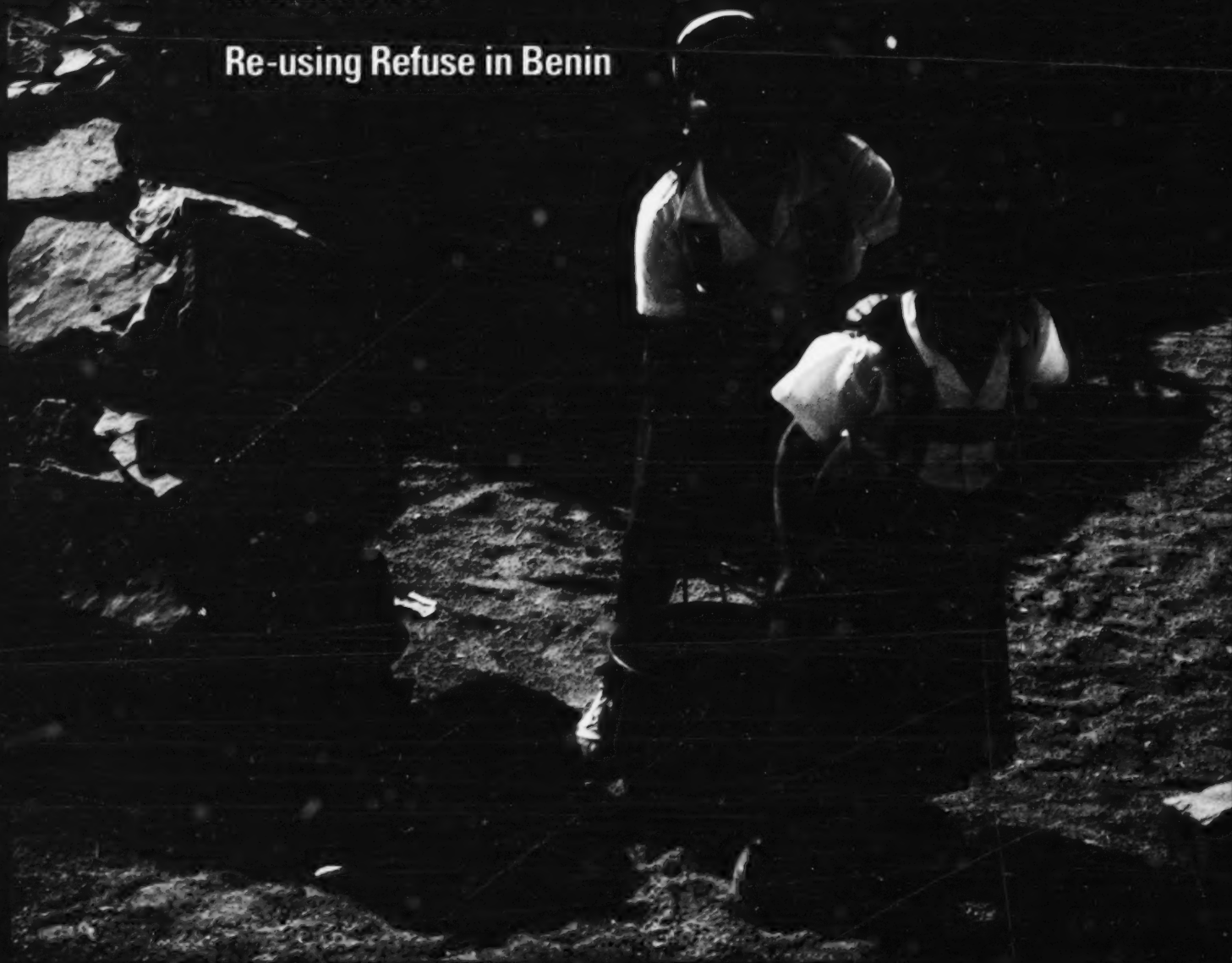
undp

SOURCE

March 1991

SPECIAL REPORT:
HEALTH EDUCATION
*Sketching a Better Life
in Urban Peru*

Re-using Refuse in Benin





May Yacoob

What Makes Hygiene Education Work?

By May Yacoob

The scientific and development communities now largely agree that changes in hygienic practices are critical to achieving lasting health benefits from community water and sanitation projects. The professional literature on water supply and sanitation shows that hygiene education is one of the main vehicles for bringing about those changes. Yet hygiene education still receives scant attention in sector programmes, probably because it is neither cheap nor easy. To do it properly requires time, resources, research, and extensive training. For these reasons, results are usually still measured in terms of the number of new latrines built and pumps installed, rather than the number of systems effectively used and maintained.

Where hygiene education is carried out, the approach is often boringly didactic and rigid. As a result, it does not have a positive impact on behaviour. Many of us have witnessed "sermons" delivered by extension agents who are oblivious to the yawns or restless movements of people in the audience. The teachers apparently think that if they are emphatic enough the health messages will sink in.

They won't necessarily. The US Agency for International Development's Water and Sanitation for Health (WASH) project recently completed a study of the effectiveness of radio messages in a water and sanitation programme in Thailand. The evaluation revealed that while the messages were useful in raising general awareness,

they did not appear to directly influence health practices.

Hygiene education should go hand-in-hand with efforts to upgrade community facilities or to ensure better use of existing facilities. Some policy makers mistakenly think that they can cure many health problems by merely distributing bars of soap. If the recipients of the soap are not made aware of the benefits of washing with soap and do not have access to an ample water supply, they are more likely to sell the soap than use it.

Government sanitation workers entrusted with hygiene education are also unlikely to influence behaviour unless they are provided with new skills, especially in communications. The normal role of a sanitation worker is to inspect latrines, yards, the availability of drainage for grey waters, and to investigate whether food is hygienically stored and prepared. As hygiene educators, these sanitation officials often take a similar policeman-like approach. In some extreme cases, they frighten people into compliance by imposing fines.

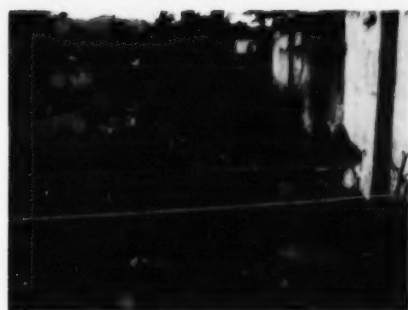
Hygiene education tends to be most successful when it is rooted in existing community values and religion — all of which form the basis of "the health belief model." Education strategies should involve those in the community

Continued on page 30

May Yacoob is a medical anthropologist and associate director of hygiene education and community participation for the WASH project.

SOURCE

March 1991



Page 16: Inspection boxes make sewage disposal a community responsibility.



Page 21: Examining trachoma, a leading cause of blindness.



Cover: School children carry water home in Canto Grande, a shanty town in Lima, Peru. UNDP photo by Emma Robson. Story on page 9.

-
- 2 LOOKING AHEAD** What Makes Hygiene Education Work?
-
- 4 SPECIAL REPORT:** Health Education
- 6** The Curative Power of Egyptian TV
- 9** Sketching a Better Life in Urban Peru
- 12** Health on Screen in Mali
-
- 16 TECHNOLOGY** Classy "Condo" Sewers for Brazil's Urban Poor
- 21 HEALTH** Washing Away Blindness
- 24 RESOURCE RECOVERY** Re-using Refuse in Benin
- 28 DONOR PROFILE** Kenya's AMREF Takes an Innovative Approach
- 30 NEWS** UN General Assembly Backs "New Delhi Statement," Urges Action
- 31 IN PRINT**

Articles may be freely reproduced so long as credit is given and tear sheets are provided to the Editors.

Published quarterly by:

Division of Information, United Nations Development Programme, One UN Plaza, New York, NY 10017, Fax: (212) 906 5364

VOL.3, NO.1

Director:

J. Russell Boner

Editor-in-chief:

Lloyd Garrison

Executive Editor:

David Kinley

Editor:

Emma Robson

Design:

Esther Kurti, Director

Nieves Singian, Assistant

Maureen Lynch

Editorial Assistants:

Mila Feliciano

Jennifer Prince

Translations Manager:

Elizabeth Scott Andrews

Production:

Linda Inocencio-Groux

Annie Straw

Afsaneh Djabbari

Danielle Strahl

Circulation:

Alison Walton

Dorothy Toy

Distribution:

Welde Hailemelekot

Aubrey Trotman

The boundaries and names shown on all maps do not imply official endorsement by the United Nations.

**READER
SERVICE**

Health Education

United Nations, New York — Efforts to improve community water supply and sanitation are doomed to failure unless they include health education for the supposed beneficiaries. Over the course of the Water Decade, this has become a widely accepted truism. Most water and sanitation projects these days do attempt to put health and hygiene training at their centre. Yet some governments and donors, perhaps in their haste for concrete results, continue to omit it. Those who do attempt popular education still often underestimate the efforts required to change peoples' ways.

Rural people must learn how to use taps, toilets, soap and water if these tools for better health are to have an impact. But before descending upon communities with posters, slides, videos and leaflets, educators need to know first what makes the people tick and then adapt the educational messages to local conditions. "Those of us who have evangelically displayed at village meetings charts showing the life cycles of parasites," wrote Tropical Medicine Professor Robert Desowitz in 1976, "know how futile this intellectualized approach to public health can be."

Sounding the depths of local culture and beliefs before designing a water and sanitation project and accompanying health campaign takes time, but it is worth it. It took months

before local researchers in northern Madagascar concluded that a pour-flush latrine would be more appropriate than the previously planned dry-pit design. But then researchers found that what the people wanted most was well water, for many knew that the schistosomiasis-infested stream water they were using made them ill. "It became apparent that we should focus on promoting safe water first, and tackle sanitation later," says national project director Guy Suzon.

To be successful, health training plans must be conceived in collaboration with local women and men. And they must be flexible. A project in India's Rajasthan state trained local health promoters in persuading women to filter their Guinea worm infested water by getting villagers to sing health messages to a popular folk melody. The musical spell worked, and virtually every woman began filtering water. But many women were using both sides of the cloth filter, washing the Guinea worm parasite back into their water

supply. So dual-coloured filters were introduced and households were taught to use one side only. Once understood, the new practice became commonplace.

There are many examples of failures stemming from imposing technologies on people without adaptive education: toilets used as tool sheds or clogged with stones and earth, and of course the quintessential symbol — the inoperative water pump. As some of the reports in this special issue illustrate, these failures can be avoided through well-planned education campaigns based on thorough social and market research.

Even high-tech societies waste "development aid" through lack of training. An Englishman we know received a word processor as a present nearly two years ago, yet he still writes us letters by hand. Fortunately he will not get diarrhoea, schistosomiasis or Guinea worm disease as a result. Millions of people in the developing world do get these debilitating diseases, simply because they are not being shown how to use the health tools that donors and governments provide.

—Emma Robson

Kenya-based AMREF was among the first NGOs to introduce community-based health care in Africa. See story on page 28.



The Curative Power of Egyptian TV

By Emma Robson

Cairo, Egypt — Each night, more than 52 million Egyptians — over 95 per cent of the total population — sit with their eyes glued to television for their daily dose of soap opera, Arab-style. Taking advantage of this huge audience, eight years ago Egypt's Ministry of Health began running anti-diarrhoea advertisements featuring many of the stars of the top-rated Egyptian mini-series in the commercial breaks.

The results were stunning. Surveys conducted in 1987 showed a 50 per cent reduction in infant mortality, down to 45 per 1,000 live births, compared with 1983. The word *mahloul*, Arabic for oral rehydration solution, became a common household word. More than 80 per cent of Egyptian mothers could explain how and when to correctly administer this life-saving diarrhoeal cure.

First to recognize the curative powers of soap opera was sociologist and communications expert Farag El Kamel. "I believe that the best way to educate is also to entertain," says Mr. El Kamel, "and that is how the idea of producing soap operas with health messages came to me."

Health officials were dubious about the concept when he first approached them in 1983. "The Ministry of Health thought it was a crazy idea," says Mr. El Kamel, who directs the Centre for Development Communications, which produces booklets and videos for edu-

cation purposes. "An actor to present health messages?" they said. "No way. It has to be a doctor."

Finally, the Ministry of Health agreed to fund the experiment through its newly-launched National Control of Diarrhoeal Diseases Project, which is backed by UNICEF and USAID. Viewer responses were so positive that the Ministry of Health soon became Mr. El Kamel's biggest customer. In addition to his anti-diarrhoea work, he was commissioned to produce soap opera commercials on family planning and on prevention of schistosomiasis, a parasitic disease transmitted through contact with water which afflicts up to 11 million Egyptians.

Mr. El Kamel is quick to give credit for the success of the campaigns to his actors, in particular Karima Mokhtar, the leading actress in the early diarrhoea ads. "Karima always played a kind, loving mother in the soaps. I believe that if you use people who are very popular, it helps in gaining rapid acceptability for the kind of messages we're trying to promote," he says. Such was the influence of this star that instead of asking for oral rehydration salts at pharmacies, parents would reportedly ask for "Karima salts." In Egypt, the packets show a silhouette of a mother nursing a child, who could conceivably be mistaken for the charismatic Ms. Mokhtar.

Mr. El Kamel's latest production is a series of 15 one-minute soap opera



Farag El Kamel's health promotion commercials have been a great success.

spots which take a particular case of diarrhoea and follow it from beginning to end. Each episode is aired three times a day, gives one message, and ends in suspense. Will the baby die? Will the husband find a packet of oral rehydration salts with which to save his life? The tension, heightened by dramatic music, compels viewers to watch the next instalment.

Through the subtle medium of a meddling mother-in-law, the spots also deal with misinformation. The mother-in-law is convinced that her dehydrated grandson should be getting medicine. She flares up when the doctor says no medicine should be given to treat diarrhoea. She insists on seeing a top doctor and on hearing the same advice she cries: "What are medicines for, then?" The mother-in-law finally gives in to medical wisdom and oversees the preparation of the ORS. The final spot opens with the words "Al hamdullilah!" —Praise the Lord! The magic powder has cured the baby, and the mother and father, Zeinab and Mahrous, are happy parents.

Encouraged by his success, Mr. El Kamel has more ambitious designs. With backing from the Ford Foundation, Johns Hopkins University in the US and the Canadian-based International Development Research Centre, he is producing a 15-episode series featuring veterans of the Egyptian TV screen. The show, to be aired in 45-minute segments, will portray the nor-



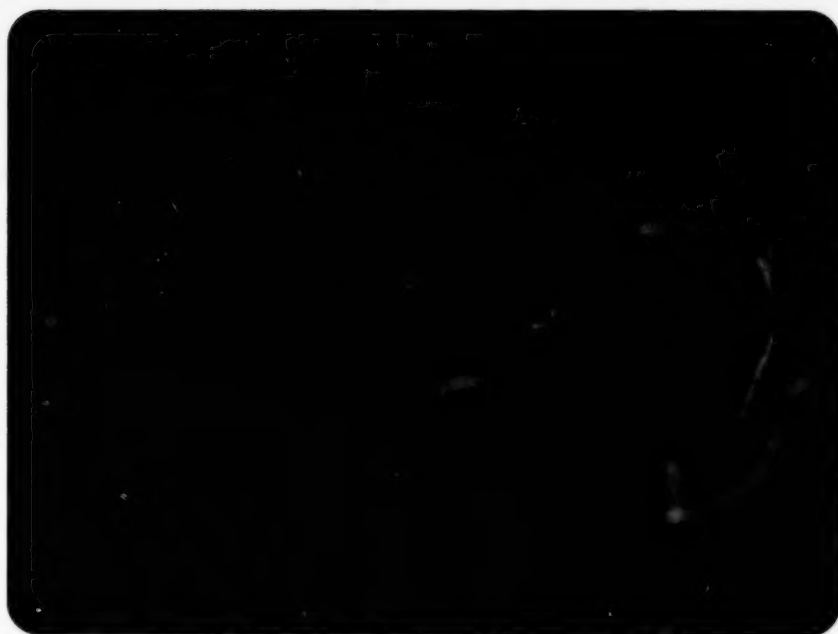
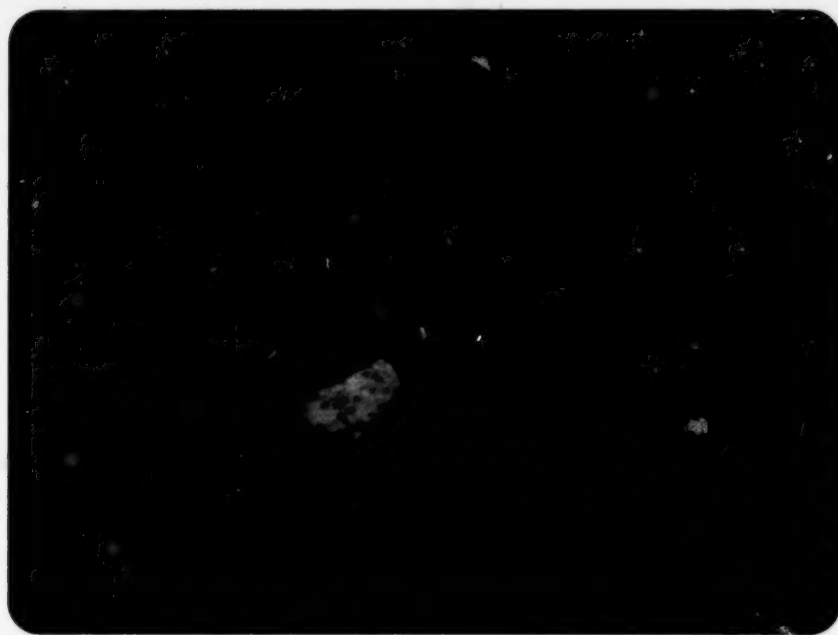
Over 95 per cent of Egypt's population watch an average of five hours television each day.

mal scenes of Egyptian family life, blending high drama with comedy, and featuring a new repertoire of health messages that build on themes in Mr. El Kamel's previous health promotion campaigns.

Mr. El Kamel has already approached TV stations throughout the Arabic-speaking world about his production. So far, he has signed up 15 television stations in 15 countries. "If all goes according to plan, the show should be hitting 200 million viewers by summer 1991," says Mr. El Kamel.

Mr. El Kamel's expectations of a wide audience beyond Egypt's borders are based on the long-standing popularity of Egyptian films throughout the Arab world. Egypt is the world's third largest film-producing country, after the United States and India. "I've been in countries at a time when they had no diplomatic relations with Egypt, yet people were watching Egyptian soap operas on TV," says Mr. El Kamel.

The diarrhoeal control messages will be hitting an attractive target audience: most Arabic-speaking countries have moderately high child mortality rates, with an average of 94 deaths per 1,000 live births. At the same time, data suggests that at 13 sets per 100 people, most families in these countries have access to television. ■



Above: In one of the TV spots, a panic-stricken woman pays a call to famous actress Karima Mokhtar, who plays a kindly mother figure, experienced in child care.

Below: In the commercials, Egyptian women learned how to give their dehydrated babies the effective diarrhoea treatment ORS.

Sketching A Better Life in Urban Peru

By Emma Robson

Lima, Peru – In an intensified battle to reduce diseases in Canto Grande, a grey shanty town within this capital city, health workers are relying on three main weapons to change human behaviour: crayons, sheets of paper, and people's visions of a better life. Most of Canto Grande's residents buy low quality water at a high price from trucks.

The aim of the three-year exercise, sponsored by the World Health Organization and organized by Lima's Institute of Nutritional Investigation, is to literally paint pictures of a healthier life designed to change the way the township's one million people live. To this end, the health workers recently spent weeks observing the life-style of nearly 350 children and quizzing their parents.

They observed practices likely to increase the spread of diarrhoea, such as the use among parents of dummies or pacifiers and giving babies milk from a bottle rather than breast-feeding them. They also saw habits likely to prevent diarrhoea such as the use of toilets and hand washing. At the end of the study period, they returned to their office to produce the artwork.

Drawing on the data collected, local artists sketched scenes of how Canto Grande would look in an ideal world. Upon completion, more than 120 women from Canto Grande were invited to the Institute's headquarters to express their opinions of the pictures. The women's verdict: not quite ideal enough.

Over a period of several months, the

These hygiene education posters, displayed here by project researchers, were designed by the people of Canto Grande, under the supervision of Hilda González, right.



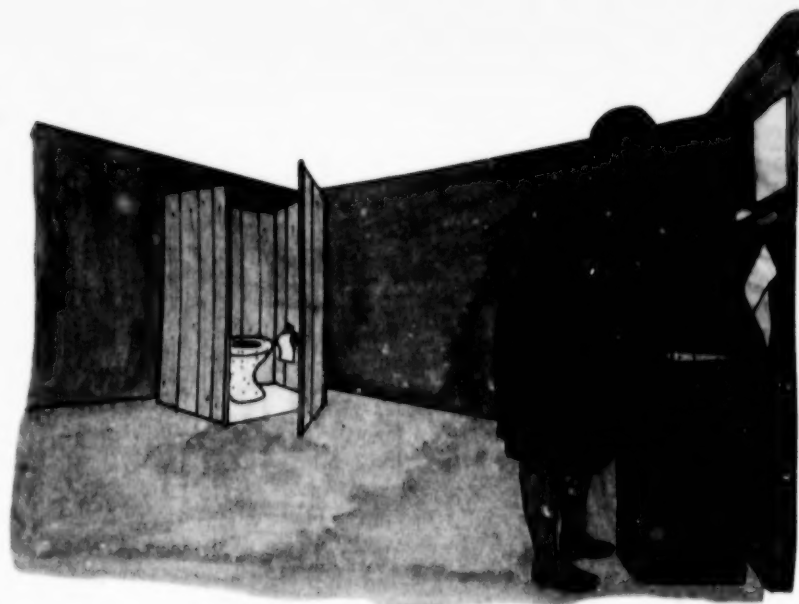
women made the changes they deemed necessary to what were intended as reflections of their own lives. They made so many corrections that in the end the pictures barely resembled reality. Houses lacking window panes were replaced in the pictures with glass windows. Walls of rush matting were replaced by bricks. The women insisted that babies should be shown sleeping on soft beds with dazzling white sheets in rooms with elegant curtains. The mothers themselves opted for genteel dresses with spotless aprons. Their loose hair was tied back and their expressions softened. Toilets consisting of a hole in the ground, which is all any family has in the real Canto Grande, were upgraded to gleaming toilet bowls.

"This enhanced vision suggests how they would like to be," says Hilda González, director of research. "If the pictures show something the women aspire to, then we are hoping it will be more effective than materials designed by outsiders."

The health education scheme now unfolding aims at fulfilling at least a few of those visions and at the same time being affordable. To introduce behavioural changes, 25 volunteers from Canto Grande itself were trained in the basics of hygiene. By early 1991, each volunteer is expected to hold daily meetings with groups of up to 15 women in several of the cheap communal dining rooms and milk clubs that have sprung up in response to economic hardship.

The meetings will feature the pictures designed by the people of Canto Grande, assembled in flip-charts, and will take the form of a "story workshop." To start with, the health workers will use a storyline they prepared. Then each mother will be invited to invent her own tale, adding all the incidental details her fantasy suggests.

Early research suggested that one alternative training method considered — making video films of domestic life



This clean room with its ceramic toilet bowl reflects the women of Canto Grande's dream.

to serve as discussion points — would be less appropriate as well as much more costly. "If given the opportunity," says Ms. González, "the people would rather watch videos than look at flip-charts. But since many have seen the lifestyles of richer people, on TV or in the city centre, they do not like to see their poverty reflected back at them on camera."

To many of the Canto Grande's residents, poverty is as new as the settlement itself. Over the past 10 years, droughts, together with a severe and persistent economic crisis, have forced millions of rural Peruvians to the capital. More than 70 per cent of Lima's seven million residents are now estimated to live below the poverty line.

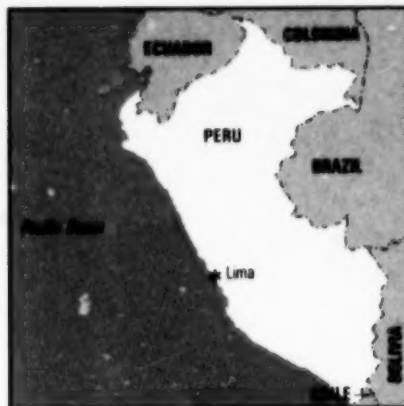
"In rural Peru," says Ms. González, "these people were able to lead a simple but adequate life where keeping clean came naturally and easily to them." In the wilderness of Canto Grande, families of five are living cramped in one room. There is no local water source, no sewers and very few latrines. For water, people have to either take a round trip bus ride costing US\$0.20 to



In the midst of a desert-like wilderness, the women of Canto Grande use water sparingly to wash clothes.



Peruvian children experience an average of eight episodes of diarrhoea per year during the first five years of life.



Photos by Emma Robson - UNDP



Most of Canto Grande's residents buy low quality water at a high price from trucks.

the nearest public standpipe and haul heavy containers home, or buy from the *aguateros*, or water trucks, which pass by each block. Stinging inflation and a surge in unemployment are making even the \$1 fee charged to fill up a standard 109-litre drum too expensive for many residents, who are forced to borrow water from their neighbours.

"Because water is so scarce, using it for personal hygiene is a low priority here," says Dr. Roberto del Aguila, co-director of the project. "Yet we've singled out hand washing as the behavioural change most likely to reduce diarrhoea." Peruvian children experience an average of eight episodes of diarrhoea per year during the first five years of life, compared with the developing world's average of four episodes a year.

While Canto Grande's lack of water is an obstacle, the project can make a difference by encouraging residents to reuse lightly soiled water. Residents reuse water so often out of necessity that they call it "taking advantage of" rather than "reusing" water. The health promoters aim to persuade them to reuse it on more occasions, and to take greater advantage of it through the addition of soap.

"The women have different notions of what is dirty," says Ms. González. "All know it is best to wash before meals, and most do it. But some think that it's fine to go from throwing out the garbage, changing a baby or tending to the chickens, to cooking a meal with only a quick dip of the hands in water."

Through pictures showing women whom most people in Canto Grande admire and identify with, through talking with neighbours trained in the basics of hygiene, and by drawing on their own imagination as story-tellers, the women of Canto Grande may learn to attain the healthier, if not more affluent, life they aspire to. ■

Health on Screen in Mali

By Emma Robson

Bamako, Mali — A video training method which boosted the output of hundreds of farmers in Peru has come to the West African country of Mali, where it is being applied to agriculture, health and hygiene education.

Mali suffers from many of the same rural problems as Peru, only more acutely. Its rural population of seven million is scattered over a vast land area, much of which is threatened with desertification. There are several major ethnic groups, each speaking a different language. The country has few agricultural or health extension workers.

"We chose Mali," says video training specialist Hector Wong-Lu, "because it has a big food production deficit, poor health indicators and needs help with training." Mali has the world's second highest infant mortality rate — 170 per 1,000 births — topped only by Afghanistan.

With a grant from the United Nations Development Programme (UNDP), more than 20 Malian university graduates were trained in video production techniques by a team of experts from the Food and Agricultural Organization (FAO) of the UN. It was the FAO which launched the developing world's first video education scheme in rural Peru in 1978 with the help of Mr. Wong-Lu.

The Malian trainees represent a wide range of academic skills and together speak all indigenous Malian languages. Each team of two or three trainees was provided with a video camera and a video cassette player, and was assigned to a group of culturally similar villages to learn about local development needs. After extensive discussions with the

villagers and local research institutions, the producers made films demonstrating solutions to the most pressing needs. They returned to the capital to edit the films and design accompanying illustrated booklets.

In contrast to Peru, the themes covered by the training packages to date have focused on health more than agriculture, which was the main intended area of education. "Health turned out to be the number one concern, followed by growing more food," says Mr. Wong-Lu. The first two packages, produced in 1990, dealt with protecting water supplies from contamination and the proper use of Oral Rehydration Solution (ORS), a treatment for diarrhoeal dehydration. The subjects were chosen after discussions with women who expressed concern about their families' frequent illnesses.

Once the training package is complete, the film-makers become teachers, spending three weeks of every month in the field to train groups of 25 to 30 people at a time. The teachers screen the videos and help reinforce what the people have seen by showing them booklets illustrating techniques such as disinfecting water with chlorine or boiling. The trainers also lead group discussions and get the villagers to demonstrate the lessons they have seen.

Videos may seem inappropriate for teaching poor and uneducated people in a country like Mali, where most rural people have a strong oral tradition but have never seen a TV screen. Yet according to the project managers, as long as videos reflect a reality the people can accept, they are more likely to remember what they have seen, and more likely to practice it, than if they





Trainee video makers learn editing techniques.

learn through listening to lectures or seeing still pictures alone. "People learn in rural areas by watching other people doing things," says Mr. Wong-Lu. "Learning by watching people do things on video, therefore, is really a natural process."

In practice, however, the trainee video-makers-cum-teachers found that what seems natural to them as literate TV viewers may appear quite odd to rural Malians. As in Peru, early versions of the films had to be changed several times to suit the audience. In one early screening in Mali, a woman, puzzled at seeing a pan of water boil in mere seconds on screen, asked, "where did you get a cooker that boils water so fast? I want one of those!" The filmmaker therefore inserted a new image of an open space, suggesting time elapsing. "We must be careful not to change ideas too quickly," says Mr. Wong-Lu. "All our films have to move very slowly from scene to scene."

Explaining ORS was tricky. Few knew of its existence despite the fact that Mali has previously mounted sev-

Photos by Emma Roberts / UNDP



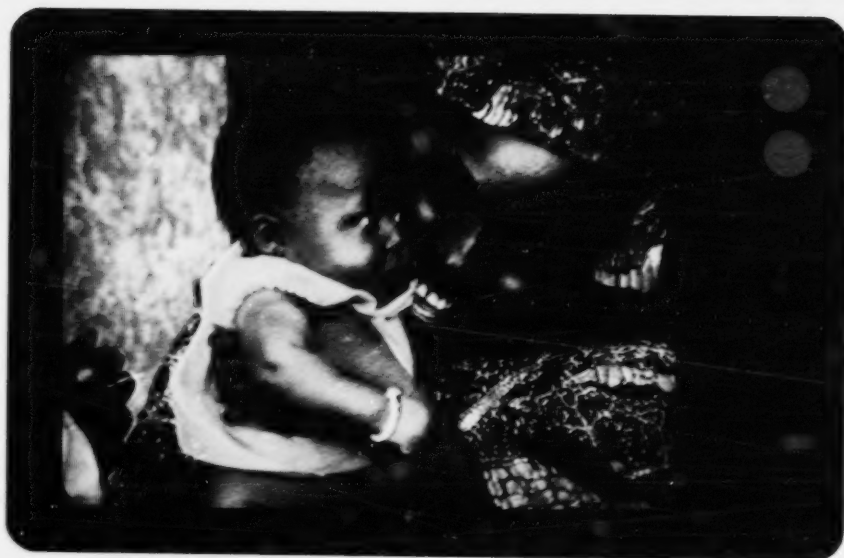
Hector Wong-Lu, director of the video training project.



Breast feeding, protection of water sources and use of ORS are promoted to improve infant health.



One video explains sources of pollution and demonstrates how to chlorinate water.



Women were shown how to treat their children's diarrhoea by giving them ORS.

eral ORS education campaigns. "Among those who had heard of ORS," says Mr. Wong-Lu, "some thought it was something you bathe in after a hard day's work." In their quest for a simple device to drive home the idea of dehydration to the Bambara people—Mali's largest ethnic group—the researchers hit upon the symbol of a withered tree. "The tree represents everything to the Bambara people," says Mody Sissoko, who was assigned to the project by the Ministry of Arts and Culture. "So we filmed dehydrated trees to show the effects of diarrhoea on people."

No single symbol was found in rural Malian experience to stand for the all-embracing concept of water contamination. "Pollution was hard to explain," says Mr. Wong-Lu. "Only after showing several situations over and over again were we satisfied that the message was getting through." Once villagers understood the concept of pollution, they were able to accept chlorination as a means of killing bacteria.

According to Mr. Wong-Lu, rural training through video has many advantages. It is a fast and highly mobile system that requires fewer personnel than traditional training methods. In three days, a two or three-person team can train up to 100 people, moving from village to village in a four-wheel drive vehicle and running the video players off car batteries. "They only need to return to the capital to recharge their batteries," says Mr. Wong-Lu. "Soon we plan to provide them with solar panels to recharge the batteries on the road."

Perhaps more importantly, the system is cheaper than conventional extension methods over the long run. Prices

of audio-visual equipment have fallen as rapidly as the technologies have improved. According to Mr. Wong-Lu, Peruvian farmers were trained more cheaply and more effectively through the video system than through the government's traditional extension system. "The overall costs of the 10-year project divided by the number of farmers trained was US\$8 to \$10, which is really low," he says.

Peru's National Training and Research Centre for Agrarian Reform, with support from UNDP and FAO, first developed the system to rapidly disseminate new techniques to improve farm productivity following the country's agrarian reform. Since then, UNDP and FAO have helped set up similar audio-visual production centres in Brazil, Honduras, Mexico and Paraguay, where they are now operating nationally under the auspices of government and non-governmental agencies. Pilot projects are also underway in China, India and Indonesia.

Aggressive marketing has enabled many of those centres to become increasingly self-supporting by selling video production services to government, industry and development agencies. Mali's centre has contracted to prepare training material for several donor-supported agricultural projects. Mr. Wong-Lu sees the government's investment in a new centre to house the expanding project as a sign of its long-term commitment to video training for rural development. ■



A trainee video maker records a voice-over narration.

Photos by Emma Robson / UNDP

Classy "Condo" Sewers for Brazil's Urban Poor

By Cherie Hart

Recife, Brazil — When Brazilian engineers designed an inexpensive, easy-to-use sewage system that was certain to benefit thousands of poor people, they weren't sure how to market their invention. After all, its name was complicated, its concept unconventional and its success dependent on full community participation.

One aspect of their marketing dilemma was solved overnight, however. Just as the engineers began to approach neighbourhoods with their idea, all of Brazil had begun watching a new soap opera portraying the love lives of residents in a condominium complex. "Condominium" had become a household word. Now, they would have an easier time introducing neighbourhoods and area water companies to their concept — a condominium sewage network. In fact, thanks to the television show, their sanitation idea almost sounded glamorous.

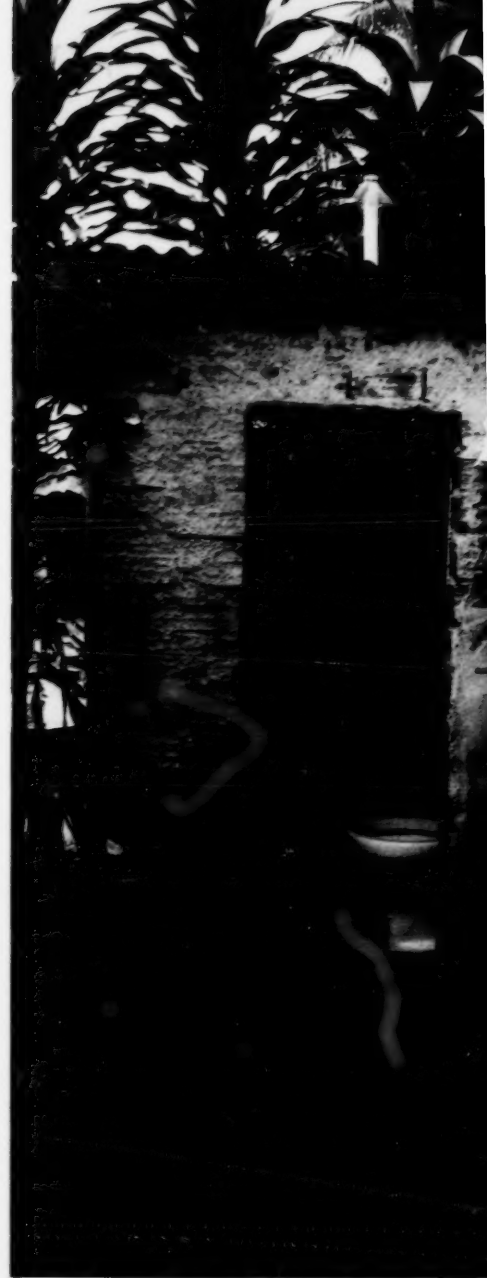
Like the philosophy behind a residential condominium, the new sewage system is based on communal consent. Each household agrees to the construction of a common sewage pipe connecting with their neighbours in each backyard. Each family is responsible for the maintenance of the length of sewer laid on its property. Simple inspection boxes at each connection are built for this purpose. If one segment of the common sewage pipe is blocked, everyone down the line is affected.

"The soap opera helped us over the hurdle of explaining the condominium

concept," says Brazilian water and sanitation expert José Carlos Melo, whose ideas inspired much of the initial concept. "But we still faced the dilemma of winning communal acceptance for a pipe running through each yard. If one person refused, then the whole block would have to abandon the notion. As it turned out, collective pressure prevailed."

The idea caught on fast. Wherever the system was installed, community sanitation improved immediately and neighbouring communities copied the plan. For Maria do Socorro, who lives in a poor settlement named Conceição in the northeastern coastal fishing town of Itapissuma, the new waste disposal system changed her life. Until two years ago, her children would get chronically sick from sewage overflowing from toilets. "There was human waste all over the neighbourhood," she says. "The chickens would eat it and our children would play in it."

When COMPPESA, the local water company in Pernambuco state, approached her neighbourhood with the condominium sewage plan many residents were sceptical. After much debate, however, the entire community agreed to have the pipes run through their yards. COMPPESA supplied most of the pipes, and Conceição's residents dug the trenches and built the inspection boxes. The residents were not asked to contribute financially. "Now my children can play in a healthy neighbourhood," says Mrs. do Socorro.



The shallow sewage system is compatible with low-volume pour-flush toilets.



Photos by Cherie Hart, UNDP



The two faces of Brazil: a squatter settlement, which has no sanitation facilities, provides a stark contrast to the nearby beachfront of modern Recife.

"Our streets no longer smell of sewage when it rains."

In the nearby neighbourhood of Poeira, a condominium system and adjoining waste treatment tanks are currently under construction. Resident Luciene da Silva admits that the system is badly needed. "With sewage all over the ground, the water gets polluted and children often get worms," she says. "They miss school and the chance to enjoy being children."

Since the development of the condominium system in 1980, more than 200,000 Brazilians in low-income neighbourhoods in 40 medium-sized

cities in northeastern Brazil have benefited from the scheme. One low-income Bihari community on the outskirts of Karachi, Pakistan even adopted the approach. However, due to lack of funds, the valuable technology has not yet reached full potential in Brazil.

But new international financing should add a fresh chapter to the expansion of the low-cost sanitation methods tested in Brazil. Since 1978 the Government of Brazil, with support from the United Nations Development Programme (UNDP) and the World Bank, has been investigating inexpen-

Brazil's Low-cost Sanitation Option

The condominium sewage concept, also known as a shallow sewerage system, was first developed in Natal, the capital of Rio Grande de Norte state in 1981. A group of engineers and planners, assembled by the State Water and Sewerage Company (CAERN), were evaluating sanitation options for two poor settlements whose 15,000 residents had no sewerage at all.

The CAERN team adjusted conventional sewer design standards to fit the conditions of the low-income area. They reasoned that the small settlements did not have major roads so they did not need large, deep sewers able to withstand heavy traffic above them. Instead, short lengths of small diameter pipe could be laid in shallow trenches through people's backyards and along narrow back alleys.

Each house would be connected to this common block sewer line. Inspection chambers are built at intervals along the length of the sewer line providing ready access for maintenance. Every house is given the responsibility for checking their own inspection box and cleaning out the sewage if a blockage occurs. The entire block of houses is then connected to the main street sewer through one or two connecting pipes.

Once the shallow sewer emerges from the block, various options exist: it can be connected to a conventional sewer, to a communal septic tank, or discharge straight into waste ponds. The choice depends on the site.

Collecting wastewater through the condominium method is cheaper than conventional sewage systems. Because the pipes are placed under backyards rather than beneath main streets, they can be smaller and shallower. "Deep excavation for laying pipes often amounts to 80 per cent of the total cost of installing a sewage system," says Augusto Guimarães, who was part of the CAERN team. "This shallow system can cost from \$150-\$500 per household to install, while a conven-



Engineer Augusto Guimarães was part of the team which developed the condominium sewage system.



Pipes are laid in shallow trenches (top). Inspection chambers are built at intervals along the sewer line (middle). Each household is responsible for its own inspection box (right).





At the end of the sewer line wastewater is discharged into communal septic tanks.

tional system can run as high as \$1,500," says Mr. Guimarães, whose Rio de Janeiro-based water engineering company, Pro Vita, is now working on a computer programme and construction manual for building shallow sewage systems, with support from the United Nations Development Programme (UNDP).

Shallow sewers are easier on water resources as they do not rely on large quantities of flush water for their trouble-free operation. Instead, they depend on a high frequency of wastewater passing through the gravity driven system. These sewers accept all household wastewater — excreta, toilet flushwater and sullage. Wastewater solids are flushed along the sewers by successive waves of water. If any solids settle, wastewater builds up behind the deposit until the pressure is great enough to get it moving again. They rarely become blocked because in densely populated areas there is a high frequency of generation of waves of wastewater to shift deposited solids.

With sewer pipes running inside the block of houses, each house connection

is kept short because it does not have to extend out to a main road. Instead, it merely travels from the kitchen and bathroom facilities to the main pipe in the backyard. A flow of water is necessary for the system to work. It is most compatible with low-volume water flush toilets.

The combination of smaller pipe diameters and shorter pipe lengths means that the cost of pipe material can be reduced by as much as 50 per cent over conventional systems. Polyvinyl chloride (PVC) pipes or cement and clayware pipes are commonly used in the shallow sewage system. Simple cement inspection boxes, rather than expensive manholes, are built at each pipe connection. ■

sive sanitation techniques.

During the early 1980s, UNDP contributed more than US\$400,000 to help the country promote inexpensive technology options, such as the Ventilated Pit Latrine, the Pour-Flush toilet, and the condominium sewage system. UNDP also supported seminars and training courses to strengthen the government's long-term capability for developing and implementing low-cost sanitation programmes. Emphasis was placed on improving management at the local level for delivering sanitation technology to low-income urban areas.

"During the first half of the 1980s, we searched for solutions to widespread sanitation problems, and even found some answers," says Mr. Melo, who is now an engineering consultant for Acqua Plan, a Recife-based water and sanitation company he founded. "But during the last five years, there was not enough money to apply what we learned on a large scale. We planted the seed, but it had little chance to grow."

Today, 10 years after the condominium sewage system was developed, 100 million people are still without sewage systems in Brazil, and 50 million have no access to safe water. "Brazil is the eighth largest industrialized country in the world," says Eduardo Gutiérrez, UNDP Resident Representative in Brazil, "and yet critical poverty is an urgent problem. The government has realized the vital need to invest in social programmes which will benefit those who have, until now, been disregarded."

Change is in the works. Final negotiations are underway for a \$1.2 billion Inter-American Development Bank loan to upgrade the quality of life in Brazil's worst slums. New projects will target housing, sewage and water supply problems. "This loan will give a boost to the technology which was developed earlier," says Mr. Gutiérrez. "We now know how to help the poorest of the poor. This investment will



Chris Hart/UNDP

Inspection boxes in front of each house provide easy access for cleaning blocked pipes.

help us do it."

Only time will tell if the promising technology will finally have the chance to reach thousands more in need of sanitation schemes. "We now have hundreds of engineers, planners and architects who are familiar with the alternative sanitation methods developed in the past," says civil engineer Stênio Cuentro, who was a member of the team that created the condominium system. "The government authorities recognize that low-cost systems work. What was once considered unconventional is now accepted technology," says Mr. Cuentro, who is now Finance Director of MOGNO, an alternative technology urban engineering company in Recife.

"We could use assistance for dissemination of information through TV and radio," adds Mr. Melo, whose firm, Acqua Plan, is one of the few Brazilian companies which still constructs the

condominium system. "It is not enough to merely inform the technicians and engineers. The local municipalities must be fully educated about all available technologies. After all, systems of this type call for a high level of community involvement."

The prospects for enlarging the number of beneficiaries of the condominium sewage system look favourable. The technology is in place, local sanitation management is in gear, and now, finally, the necessary investment package is forthcoming. Perhaps the only catalyst missing is a new soap opera. ■



Emma Robson / UNDP

An Egyptian woman has her eye examined for trachoma at Cairo's Research Institute for Ophthalmology.

Cairo, Egypt — Regular washing of hands and faces could have prevented blindness in five to 10 million people world-wide who have trachoma. Washing could still help the estimated 500 million people who are infected with the disease from eventually losing their sight. Trachoma is caused by the bacterium *Chlamydia trachomatis*, which is transmitted from eye to eye, usually by the common house fly and sometimes through contaminated cloth or water. Flies are attracted to the discharge caused by the disease and deposit secretions on the eyes or nasal mucus of uninfected people.

Trachoma is the leading cause of blindness in Egypt. Dr. Magdoline El Gammal, director of the National Research Institute for Ophthalmology, estimates that two to five per cent of Egyptians have the disease, which she attributes to water scarcity, an abundance of flies attracted to mounds of festering rubbish, and most importantly, a lack of awareness. "If we

catch the infection early on, we can treat it," says Dr. El Gammal. "Unfortunately, few people seek treatment, so it leads to complications of the cornea, which leads to blindness."

Her prescription — hygiene education — sounds like a simple remedy. But as medical anthropologist Dr. Sandra Lane discovered, simple education will not necessarily lead to behavioural changes. In a two-year study of a village in northern Egypt she found that a majority of women and children did not wash regularly, for a variety of reasons.

More than half the parent population said they did not wash their children because that would make them more attractive and therefore vulnerable to the evil eye, which brings bad luck. Many families did not wash in cold weather, since exposing children to

Washing Away Blindness

By Emma Robson

cool temperatures is thought to cause many illnesses.

Lack of washing in Muslim countries like Egypt is perhaps surprising, for followers of the Koran traditionally wash their hands and faces regularly before prayer. But in this village, most women with young children did not pray because they were occupied with their family or frequently considered themselves ritually impure because of sexual activity and menstruation. Since they did not pray, they did not wash. Of those who did perform their ritual ablutions before prayer, many risked infecting or being infected with trachoma by using a common bowl of water, in which the bacteria can survive for about one hour.

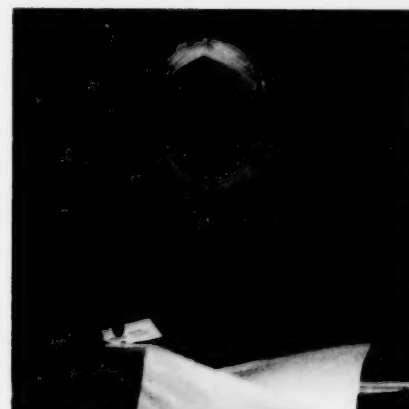
Dr. Lane believes that lack of wash-



Photo by Emma Robson, UNDP

By staying clean, this Egyptian family can help prevent trachoma, despite the fact that their village has poor sanitation.

Dirty faces and runny noses tend to attract flies, which transmit trachoma.



Dr. Magdoline El Gammal is director of Egypt's Research Institute for Ophthalmology.

ing, particularly among women, explains why one-fifth of the village women over the age of 50 could not see three fingers held up three metres away. She observed the beginnings of trachoma in children as young as three months old. By the age of eight, some children's eyelids were turning in, and their lashes were scratching the cornea. Half of all 10-year-olds had scarring caused by repeated infections. Over time, these scars cause the eyelid to contract, which turns the eyelashes inward. Eventually, the entire eyelid can turn inward to scour the cornea at every blink, causing searing pain. "It's like steel wool over a pan," says Dr. Lane.

Even at this advanced stage, simple surgery can stop blindness from progressing. Without surgery, the cornea becomes an opaque scar, and only a cornea transplant will bring back a person's sight. The high cost of transplants allows Egypt's Institute for Ophthalmology to carry out only a small number each month. "Each cornea alone costs the government US\$37," says Dr. El Gammal. "And while the operation only takes one hour, patients have to stay at least three days in hospital."

In Egypt's villages, as in many water-scarce countries where poor hygiene and crowded living conditions may prevail, trachoma is quite a common condition and is therefore accepted as part of nature. "People associate decreased vision with older age, so they don't question it," says Dr. Lane. "Also, since it is something that affects women more than men, it is not noticed so much."

Yet less than one century ago, trachoma was taken very seriously. It was a disease that was sure not to escape the scrutiny of officials who examined immigrants to the United States who landed at Ellis Island, New York — then the gateway to America. Around the turn of this century, trachoma was a common disease in Europe. US offi-



A US immigration officer examines the eyes of an immigrant for trachoma in 1906. Courtesy of California Museum of Photography, Keystone-Mast Collection.

cials at the time described it as "a dangerous contagious disease" and would send home anyone with the tell-tale signs of eye inflammation. Since then, piped water, showers, underground sewers and tonnes of soap and detergent have washed away trachoma in the developed world.

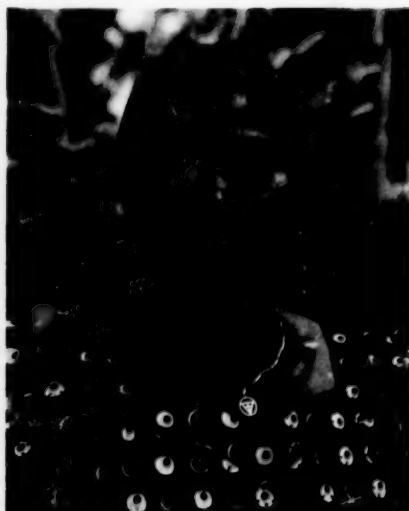
Over the next century, some developing countries may attain similar levels of water and sanitation services. But improvements need not be so sophisticated. By simply providing more water, teaching people to use it, and by keeping flies at bay by ensuring that rubbish and excreta are properly disposed of, trachoma can be controlled.

It might also be prevented by a vaccine. The search for a vaccine is one of the main thrusts of the Edna McConnell Clarke Foundation's tropical disease research programme, which financed Dr. Lane's research. "If we can find a vaccine to induce immunity at an early age in children," says Dr. Joe Cook, who heads the programme from New York, "we would be able to

stop the repeated infections and therefore the scarring."

Prospects for an effective vaccine at this stage are unclear. Dr. Cook believes scientists are years away from identifying even a candidate vaccine to try in humans. The current recommended treatment for trachoma — an antibiotic ointment applied to the eyes twice daily for a month — is effective but does not prevent reinfection. Foundation studies found that prevalence rates climb back up to pre-treatment levels one year later. Moreover, says Egypt's Dr. El Gammal, "you can give people ointment but cannot be sure they will use it. Many do not apply it throughout the whole month."

In the meantime, Dr. Cook says the best way of preventing trachoma is to improve water supply services, and to combine those improvements with hygiene education that emphasizes washing, ideally with soap. "I think if everyone had a plentiful supply of water near their homes there would be less trachoma," he says. "While that water would have to be properly used to be beneficial, studies show that just the fact that there is more water can lower the incidence of trachoma." ■



Rural development expert Veronique Gnanih.



Sorting garbage at the Tohoue Recycling Centre.

By Ruth Massey

Re-using Refuse in Benin

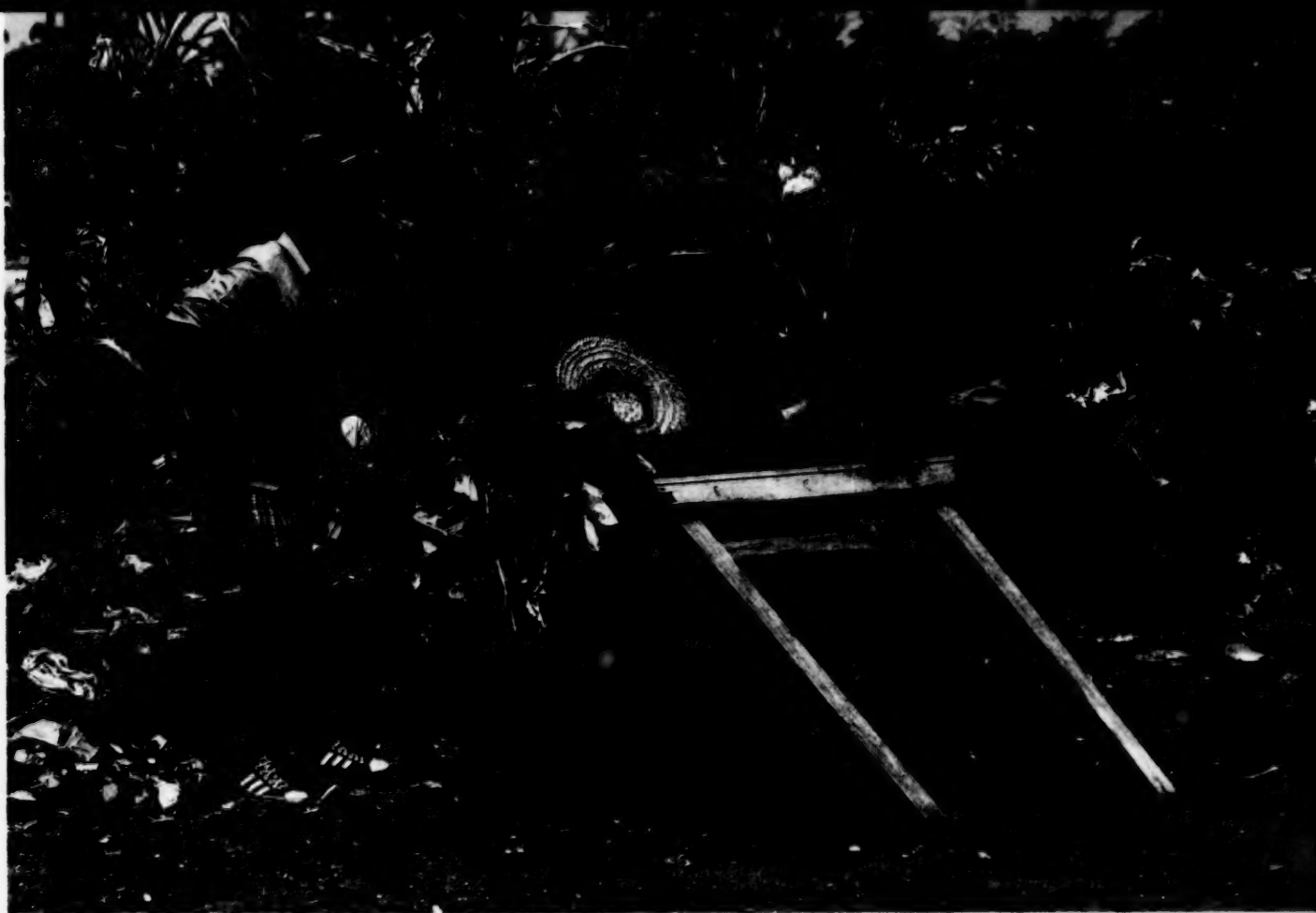
Porto Novo, Benin — Compared to the far more commercial port city of Cotonou, 32 kilometres up the coast, Porto Novo, Benin's capital, has a population of only 150,000 and a run-down, ramshackle look about it. Its narrow streets are lined with the red earth walls of 16th century homes that once belonged to rich Portuguese who sold slaves and tobacco to the Americas. These grand colonial buildings are crumbling now, vying in decay with the mountains of garbage that rot on the streets.

There used to be even more garbage in Porto Novo. "The huge piles of refuse were getting larger and larger all over town because there was no collection," says Veronique Gnanih, who runs the recently established Tohoue Garbage Recycling Centre, eight kilometres outside Porto Novo. "One

heap was as high as a four-storey house, and no one knew how to get rid of it." Besides being an eyesore, the mountain of garbage was a health hazard to children who played nearby. "The stench got so bad that people in the neighbourhood began to move out," says Ms. Gnanih.

Two years ago, however, Ms. Gnanih, a rural development expert, approached the president of the Centre Panafricain de Prospective Sociale (CPPS), a local non-governmental organization (NGO) that supports environmental projects in several African countries. She suggested creating a composting centre to transform the garbage into fertilizer to enrich the poor soil of the Porto Novo region, and to create jobs. CPPS agreed to help fund the experiment.

The first challenge for Ms. Gnanih



Workers sift compost to be used as fertilizer on the region's sandy and over-used soil.

Photos by Ruth Masses / UNDP

was to procure a site to recycle the garbage. "CPPS bought seven hectares of land in the village of Tohoue to launch the project on an experimental basis," says Ms. Gnanih. Then EMMAUS International, a French NGO, joined the effort by providing a tractor and two trailers. "We parked the trailers in two locations — one near the station and the other near the football stadium — and people started dumping their rubbish in them," says Ms. Gnanih. "It was as if they knew instinctively what the trailers were there for."

Every evening the tractor tows the trailers back to the recycling centre in Tohoue, where 21 previously unemployed youths work at sorting out the garbage. They remove plastic, metal, glass and all other substances that do not decompose biologically. They sell the metal to a blacksmith. The glass is

crafted into jewellery by local artisans. Plastic is kept aside because they cannot find a use for it.

The organic refuse is thrown into pits and covered with palm fronds. As the fronds rot, they turn the garbage into compost. Humidity, air flow and heat are checked regularly to ensure that fermentation takes place correctly. After two months, the compost is ready for use.

In the early days, samples sent to a laboratory at Toulouse University revealed that the compost did not contain enough nitrogen to allow adequate fermentation. "The laboratory proposed adding water hyacinths to the compost," says Ms. Gnanih. As it turned out, water hyacinths which have a high nitrogen content were found growing in abundance on the lagoon outside Porto Novo. In fact, the lagoon had



accumulated so many water hyacinths that it was depriving fish of oxygen, causing local fishermen great concern. "Now, when we take hyacinths for our compost," says Ms. Gnanih, "we're doing the fishermen a favour."

Also on the recommendation of Toulouse University, the centre constructed a latrine with a small waste water purification tank. The latrine empties out into a long, shallow tank lined with blue plastic. Periodically, the staff add water hyacinths, which proliferate in the nitrogen-rich water. Besides being used for compost, the plants, which are rich in vitamin A, make nourishing fodder for pigs and chickens. Chickens fed on the plants produce eggs with harder shells and yellower yolks. The tank is kept relatively free of flies thanks to frogs that live in the web of water hyacinth leaves and feast on flies and mosquitoes that are attracted to the pond. Tilapia and catfish are also added to the pond to feed on the fecal matter, and act as a gauge of water purity. The water hyacinths and fish also help render the tank free of odours.

In addition to producing the compost, for which they are paid US\$3 a week, the youths employed by the Centre have branched out into market gardening. With funds from the United Nations Development Programme's Partners in Development, which supports small, innovative NGO projects, the Centre bought seeds and an additional hectare of land.

Malnutrition, illiteracy and poverty are endemic to this region of Benin. Its sandy soil was never rich and has grown poorer through over-use. Yet in one year, 18-year-old Kodjo Gato, who works at the Centre, was able to prove

Market gardens flourish with the help of compost.



Green beans grown with compost are larger and keep longer.



Water hyacinths purify the Centre's wastewater.

to his once sceptical family and friends that the soil of Tohoue can produce lots of vegetables, and tasty ones at that. "My father and friends told me it was useless to even try growing anything on this land," says Mr. Gato. "They couldn't believe their eyes when they saw our spinach. Using five wheelbarrows of compost, we got three crops from a plot of 120 square metres," he says.

The villagers were so impressed that they are now paying \$2 for a wheelbarrow of compost to use on their own gardens. "When they took the compost home and applied it to their crops," says Ms. Gnanih, "they were amazed at the amount of corn and manioc they could produce on what they thought was infertile soil."

Besides spinach, the youths grow cucumbers, green beans, cabbage, peppers and onions. Because meat is expensive in Tohoue, the project organizers are also cultivating vegetables rich in protein, such as *ablat*, a bean that requires very little water to grow. "We just put a bit of compost around the foot of the plant and it pro-

duces beans all year round," says Mr. Gato, who has learned how to make seed beds and keep records of plantings, harvests and sales.

Many who buy the produce say it is of a higher quality than the vegetables found in the local market. It also keeps longer. "We were able to keep cucumbers for one month without refrigeration," says Mr. Gato, adding that cucumbers usually start to rot after a week. "Now we are experimenting with cabbage to see if it too will keep longer."

Like the other young men who were selected to work at the Centre, Mr. Gato now says he has learned enough about market gardening to be able to train others. Ms. Gnanih thinks that within a few months the Centre will have earned enough from sales of fertilizer and vegetables to buy an additional garbage trailer and to hire more unemployed youths to work as garbage sorters and trainee market gardeners. ■



Weighing infants in rural areas helps ensure their healthy growth.



Moses Lukhando, AMREF's senior health education officer.

Spreading Better Health:

Kenya's AMREF Takes an Innovative Approach

Nairobi, Kenya —The African Medical and Research Foundation (AMREF), a Kenyan non-governmental organization known throughout Africa for its Flying Doctors Service, is conducting innovative health promotion campaigns in several countries of East Africa.

"For too long development programmes have been giving people things with little community involvement. The result is that lasting benefits have been few," says Moses Lukhando, AMREF's senior health education officer at its Nairobi headquarters. "Our experience has shown that once you include the community, health messages are spread far more effectively."

Since the late 1970s, AMREF has been one of several non-governmental organizations spearheading the concept of community-based health care in Africa. "We have a social science approach to health education," says James Sheffield, president of AMREF-USA, the largest of AMREF's nine overseas offices. "We begin by studying the community to find out its practices, what it knows, and why one community's life-style is different from another's." Only after in-depth discussions with the members of a community does AMREF develop and



AMREF's programmes reach out to villagers in five East African countries.

distribute educational materials directly suited to their needs.

Founded in 1957, AMREF has now been managing health projects for over 30 years in Kenya, Somalia, Sudan, Tanzania and Uganda, with an emphasis on low-cost health care. In 1990, the organization spent more than US\$15 million on over 60 separate health programmes in Eastern Africa, with Uganda, Kenya and Sudan being the largest recipients. Funds for these projects come mainly from governments and non-government aid agencies in Europe, North America and Africa as well as from private foundations.

Operations in Kenya have been growing rapidly from over \$6 million in 1990 to almost \$8 million in 1991. Nearly \$1 million is supporting health behaviour and education activities in the country. AMREF's community-based approach to health education in Kenya consists of using different agents to bring about change. Students are used in Nakuru and West Pokot, two towns north of Nairobi. In Kitui, east of Nairobi, women's development groups disseminate healthcare information. In Kakamega and Siaya, two townships in Western Kenya, traditional health practitioners — including midwives — have been taught modern

medical approaches to the most common diseases.

Students and women's groups are the easiest to work with because they are receptive to new ideas, according to Mr. Lukhando. In Nakuru, children between the ages of 13 and 16 are taught personal hygiene and how to cope with simple medical problems.

In the hilly West Pokot area, where the terrain has caused pit latrines to collapse and contaminate water sources, AMREF built a demonstration Ventilated Improved Pit latrine and encouraged teachers, students and the community to build similar models in their villages with AMREF providing the slabs of concrete for the walls and foundations. The women's groups raise money, and with additional funds from AMREF, drill wells for the community. AMREF funds also assist women in creating small businesses.

Efforts to win over traditional health practitioners in the densely populated settlements of Kakamega and Siaya began in September 1989. Both these settlements have a high death toll from malaria, diarrhoea, malnutrition and typhoid. Yet it took almost a year to earn the full support of the healers. "They were suspicious about us initially," recalls Mr. Lukhando. "When they realized that we were working to

improve their health conditions, they began to trust us. Now they can't wait to attend the next health workshop."

Babies are rarely immunized in Siaya, which has a population density of 200 people per square kilometre and a scarcity of medical workers. This largely explains its high infant mortality rate of more than 180 deaths per 1,000, which is nearly twice the national average. "As a result, the women keep having more children and further risk their health," says Mr. Lukhando.

Initially, a lot of time and patience was spent determining which local healers were the most respected. Once chosen, the healers were taught to diagnose and treat such common ailments as headaches, fever and diarrhoea. The next step was to persuade them to dispense drugs containing paracetamol for headaches and recommend oral rehydration solutions for diarrhoea. "The challenge was in convincing them that these treatments worked," says Mr. Lukhando.

Mr. Lukhando always advises the traditional healers to refer the patient immediately to the nearest health facility when they cannot treat a problem. "We tell them it is the only way to save lives," he says. After training, AMREF monitors the performance of the healers in training other people on a monthly basis. Last year, AMREF spent more than \$1 million on training alone.

If the traditional healers turn out to be effective health promoters, Mr. Lukhando says AMREF hopes to reach villagers in Tanzania and Uganda through similar schemes. "So far, the healers are working very well," he says. "Our lesson has been never to overlook the community." — I.R.



UNDP Administrator William H. Draper III addresses the New Delhi Global Consultation.

UN General Assembly Backs "New Delhi Statement," Urges Action

The United Nations International Drinking Water Supply and Sanitation Decade officially ended in December 1990, but a new chapter began with the United Nations General Assembly endorsing recommendations for sector developments in the 1990s and requesting a review of progress by its Economic and Social Council in 1995.

In a report issued December 3, the General Assembly welcomed the New Delhi Statement adopted at the Global Consultation on Safe Water and Sanitation for the 1990s, held in India in September 1990. It pledged support for the four guiding principles recommended at the meeting concerning the need to protect environment and health, to make institutional reforms and encourage the full participation of women, to promote community management and to adopt sound financial practices and appropriate technologies.

In addition, the Assembly urged governments to assign greater priority to the financing of water supply and sanitation, especially in low-income urban and rural areas. It also asked UN agencies and other development organizations to increase their financial and technical support to governments.

The report called for a greater role to be played by the Interagency Steering Committee for Water Supply and Sanitation and the donor and government

forum, the Collaborative Council, in co-ordinating national sector activities.

The report was positively received by United Nations sector professionals. "It's an indication of continued support at the highest level," said Martin Beyer, who co-ordinated the New Delhi Global Consultation on Safe Water and Sanitation for the 1990s. The recommendations of that four-day meeting formed the basis of the General Assembly's discussions. "It shows there is stronger political support now for water and sanitation as urgent basic human needs than there was at the start of the Decade," said Mr. Beyer. Joe Christmas, chief of UNICEF's water and environmental sanitation section, found the statement's call for greater investments in rural and low-income urban areas encouraging. "Of the large numbers of unserved, 80 per cent are in rural and low-income urban areas," he said. ■

VIEWPOINT

Continued from page 2

who are traditionally responsible for passing on health beliefs: religious leaders, teachers, birth attendants and village elders.

An essential step in this process is to analyse community hygiene behaviour and how it changes over time as a result of education programmes. But this kind of evaluative work is normally beyond the capabilities of most community workers. Health research at the national level, moreover, tends to rely on "scientific" methods rather than observational methods. Both techniques are needed. We need to know not only how many people do or do not use a latrine, but *why* they do or don't.

To make health education work, more resources must be devoted to training community workers in health behavior analysis that goes beyond the counting of facilities. Only then can they construct an accurate picture of the health behaviour of a community from the perspective of the users. Training is also needed at the national level to help social scientists and epidemiologists determine which water and sanitation facilities can best produce the expected health benefits, and what kind of educational approaches are needed to ensure that behavioural changes do, in fact, take place. ■

LOW COST TECHNOLOGIES

RURAL WATER SUPPLIES AND SANITATION: A TEXT FROM ZIMBABWE'S BLAIR RESEARCH LABORATORY

by Peter Morgan

358 pages

Available free of charge from:

MacMillan Publishers Ltd.

International Division Sales Manager

Houndmills, Basingstoke RG21 2XS
England

Fifteen years of intensive field research conducted by the Blair Research Institute has culminated in a very readable, fully illustrated volume on low-cost water and sanitation technologies that have proven effective in rural Zimbabwe. About two-thirds of the book deals with explaining the options developed for rural water supplies, including hand-dug wells, handpumps such as the Bush Pump and Bucket Pump, gravity systems, rainwater harvesting and water purification. The last third focuses on the merits of pit latrines, especially the very popular, inexpensive Blair model which Zimbabweans are constructing by the hundreds of thousands.

While Blair's research and development activities have had a big impact on Zimbabwe, they are not well known outside the country, especially in the African continent where they are particularly applicable. To rectify the situation, the Swedish International Development Agency (SIDA) is supporting the free dissemination of this new volume to water and sanitation projects using an "appropriate low-technology approach."

NEW FROM PROWESS

TAKING THE PULSE FOR COMMUNITY PARTICIPATION

IN WATER AND SANITATION

by Deepa Narayan-Parker

10 pages

Available free of charge from:

PROWESS / UNDP

304 East 45th St. (FF-12108)

New York, NY 10017, USA

How do local communities assess their progress in improving local water supply and sanitation? What measures provide a basis for evaluation and enable people to better manage operations? Five multilateral, six bilateral and seven non-governmental aid agencies recently got together to answer these questions. This brief brochure sets forth their preliminary findings.

EDUCATIONAL TOOLS

WATER PACK: PHOTOGRAPHS, CASE STUDIES AND ACTIVITIES

ABOUT WATER AND DEVELOPMENT

by Pete Hedges and Scott Sinclair

76-page book plus 32 full colour

photographs

Price: £10.35

Available in English from:

Development Education Centre

Selley Oak Colleges

Bristol Road

Birmingham B29 6LE

England

Water Aid of the UK has funded this development education packet issues to secondary schools and adult groups in developed countries. The main focus is on Africa. Designed to support those planning workshops and teaching schemes, it is presented in a way that invites the teacher to select and adapt the stimulus material to meet specific workshop needs. Covering subjects from hookworm to the politics of the Nile River, the Water Pack provides a provocative first plunge into the issues.

THE DECADE IN ASIA

WATER SUPPLY AND SANITATION— BEYOND THE DECADE

228 pages

Available free in English from:

The Asian Development Bank

Water Supply Division

Infrastructure Department

P.O. Box 789

1099 Manila, Philippines

A well edited, attractive report on the June 1990 regional consultation on water supply and sanitation in the Asia and Pacific region. It includes papers presented at the meeting on topics ranging from urbanization and environmental pollution to sustainability and the role of the beneficiaries. The preface sums up the water and environmental health problems facing the region and documents recommendations set forth at the meeting.

Safe Water 2000

**A video and companion booklet
on water and health challenges
in the 1990s**

More than one billion people in the developing world rely on risky water supplies. Even more lack adequate sanitation facilities. Waterborne diseases take a heavy toll — especially among the young.

Now UNDP offers a colour video and booklet on the positive steps being taken to address this human suffering.

The *Safe Water 2000* video draws on film footage and photos from throughout the developing world to highlight the achievements of the past decade — including expanded water and sanitation services, low-cost technologies and women's participation — and portrays the challenges for the international community to the year 2000. Available in English and French as a 15-minute video tape (VHS-NTSC, SECAM or PAL). Price: US\$20.00, payable by a cheque drawn on a US bank or international money order.

The *Safe Water 2000* booklet reports on water, sanitation and health problems in the developing world and case examples of innovative programmes in rural water supply, urban waste management, hygiene education, low-cost sanitation and other subjects. Published in English, French or Spanish, this 32-page colour booklet is available free of charge from UNDP and accompanies any video order.

To order, or for further details, contact:
UNDP, Division of Information
One UN Plaza, 19th floor
New York, NY 10017, USA